

KENYA METHODIST UNIVERSITY
FIRST TRIMESTER EXAMINATION, APRIL 2008

DEPARTMENT : COMPUTER AND INFORMATION SCIENCE
COURSE CODE : DCIS 251 / CISY 251
COURSE TITLE : PRINCIPLES OF TELECOMMUNICATIONS I
TIME : 2 HOURS

Instructions:

Answer ALL questions in Section A and any other TWO questions in Section B.

Section A (30 Marks)

- i. Define the following terms:
 - a. Telecommunication (3 Marks)
 - b. Channel
 - c. Switch (3 Marks)
- ii. Describe three modulation techniques modems use. (6 Marks)
- iii. Briefly describe any three transmission media selection criteria. (3 Marks)
- iv. Describe any three encryption algorithms. (6 Marks)
- v. List three advantages of the TCP/IP reference model over the OSI reference model. (3 Marks)
- vi. Describe how the ATM works (4 Marks)
- vii. Differentiate between
 - a. CSMA/CD and Token ring (2 Marks)
 - b. Intranet, Internet and extranet. (3 Marks)

Section B

Question One (20 Marks)

- i. Describe the function of the TCP/IP layers. (8 Marks)
- ii. Describe the following transmission media
 - a. Twisted pair
 - b. Satellite
 - c. Fiber optics
 - d. Infrared (12 Marks)

Question Two (20 Marks)

- i. Discuss any four functional components of the Telecommunications Management Network. (4 Marks)
- ii. Describe the function performed by the following layers of the OSI reference model: Physical, datalink, transport, network, and presentation. (10 Marks)
- iii. What is the importance of layering in network architectures? (2 Marks)
- iv. Why are standards important? Describe:
 - a. Proprietary standards
 - b. De facto standards
 - c. Open standards. (4 Marks)

Question Three (20 Marks)

- i. Compare and contrast the three LAN technologies/ standards. (12 Marks)
- ii. Describe the following WAN technologies:
 - a. ISDN
 - b. Frame relay (8 Marks)